

Developing Disaster and Climate Resilient Cities in Indonesia*

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Disaster and Climate Resilient Cities in Indonesia

A review on current understanding, framework and policy make up

This document provides some highlights on our current understanding on Disaster and Climate Resilient Cities, their fundamental frameworks, policy built up and their future implementation in Indonesia. Refined definition, characteristics, components, indicators as well as tools for urban resilience are outlined. These are laid down within the framework of the three major pillars, i.e. the risk-sensitive spatial planning and zoning, urban ecosystem restoration, and investment for urban upgrading. This document is expected to fill a large gap in providing forward-looking, integrated, multi-hazard multi-stakeholder, urban systems approach to planning and developing resilient urban settlements.



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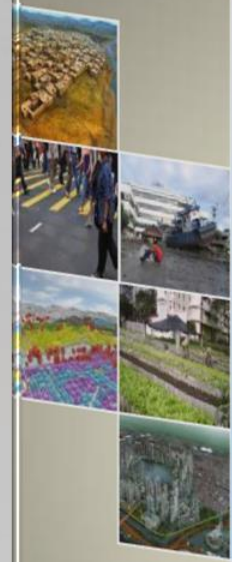
Indonesia International Institute for Urban Resilience and Infrastructure (i3URI)



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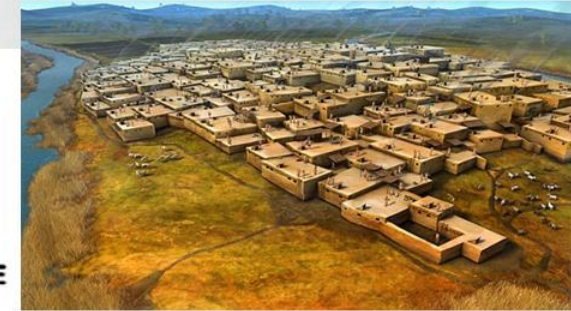
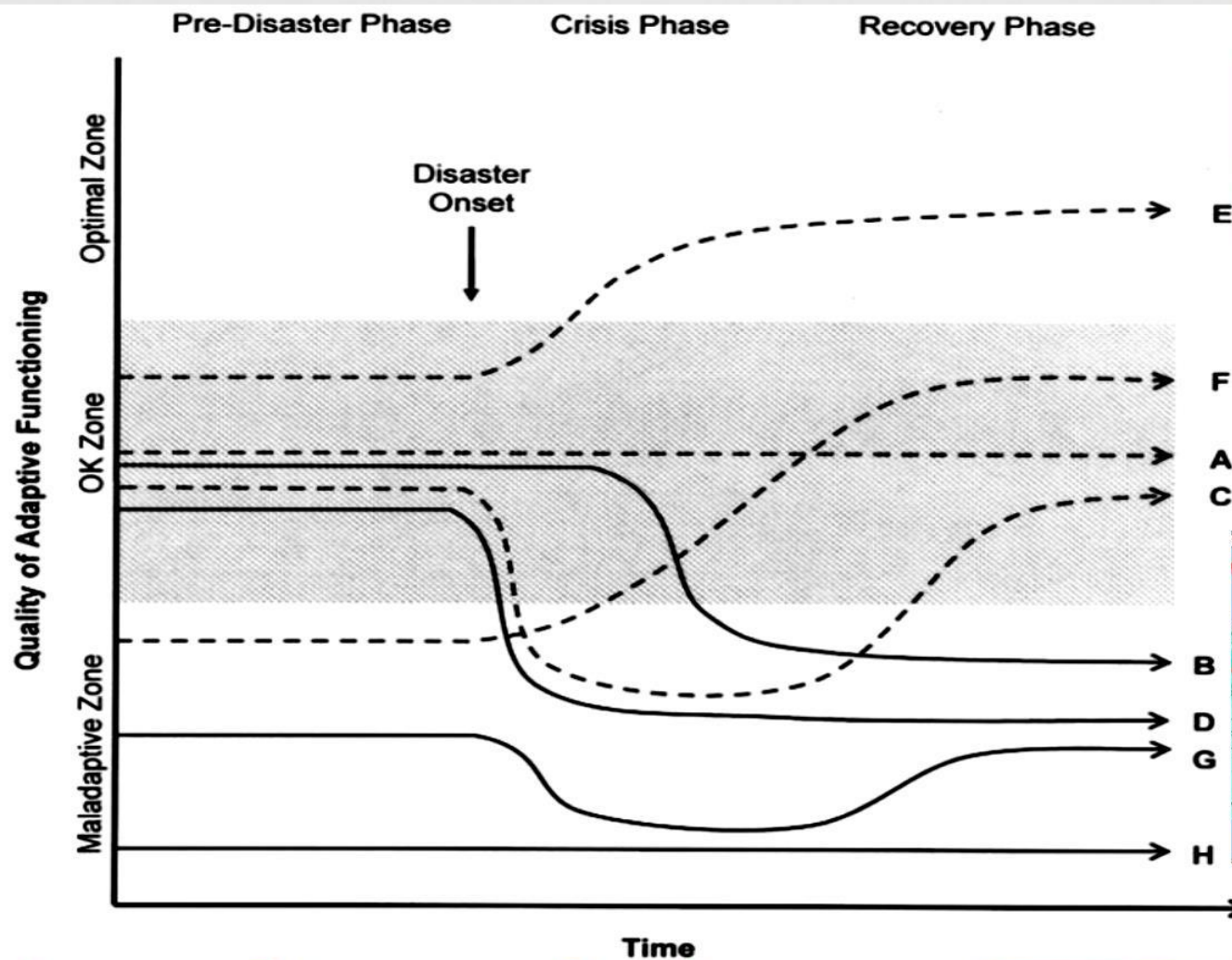


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Shock, Resilience and Transformation



Megaurban

'Resilience' global initiative on the move

"the ability of a system, entity, community, or person to withstand shocks while still maintaining its essential functions and to recover quickly and effectively."

Obama Executive Order 2013

"Identifying, then removing barriers to resilience-focused actions/investments in current policies and programs, managing lands and waters for climate preparedness and resilience, and providing information, data, and tools for climate change preparedness and resilience."

'Smart Growth'

'Sustainable Development'

'New Urbanism'



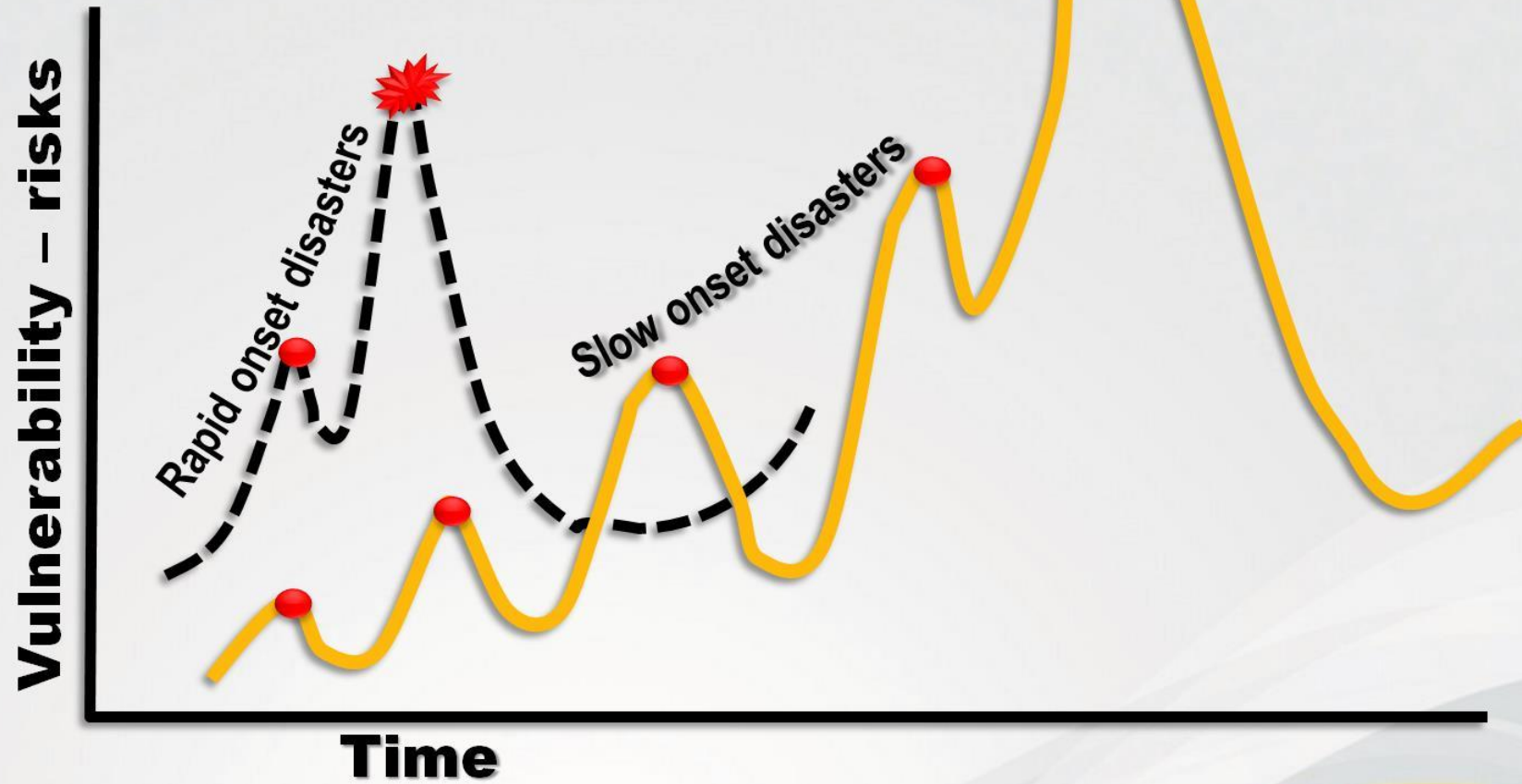
Agenda 21/Sustainable Development

- Resilience

Climate change

- Acute shocks
- Chronic stresses

Rapid and slow onset disasters



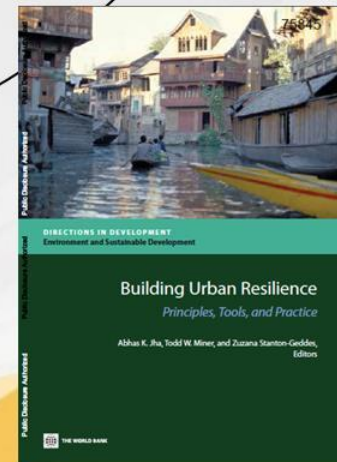
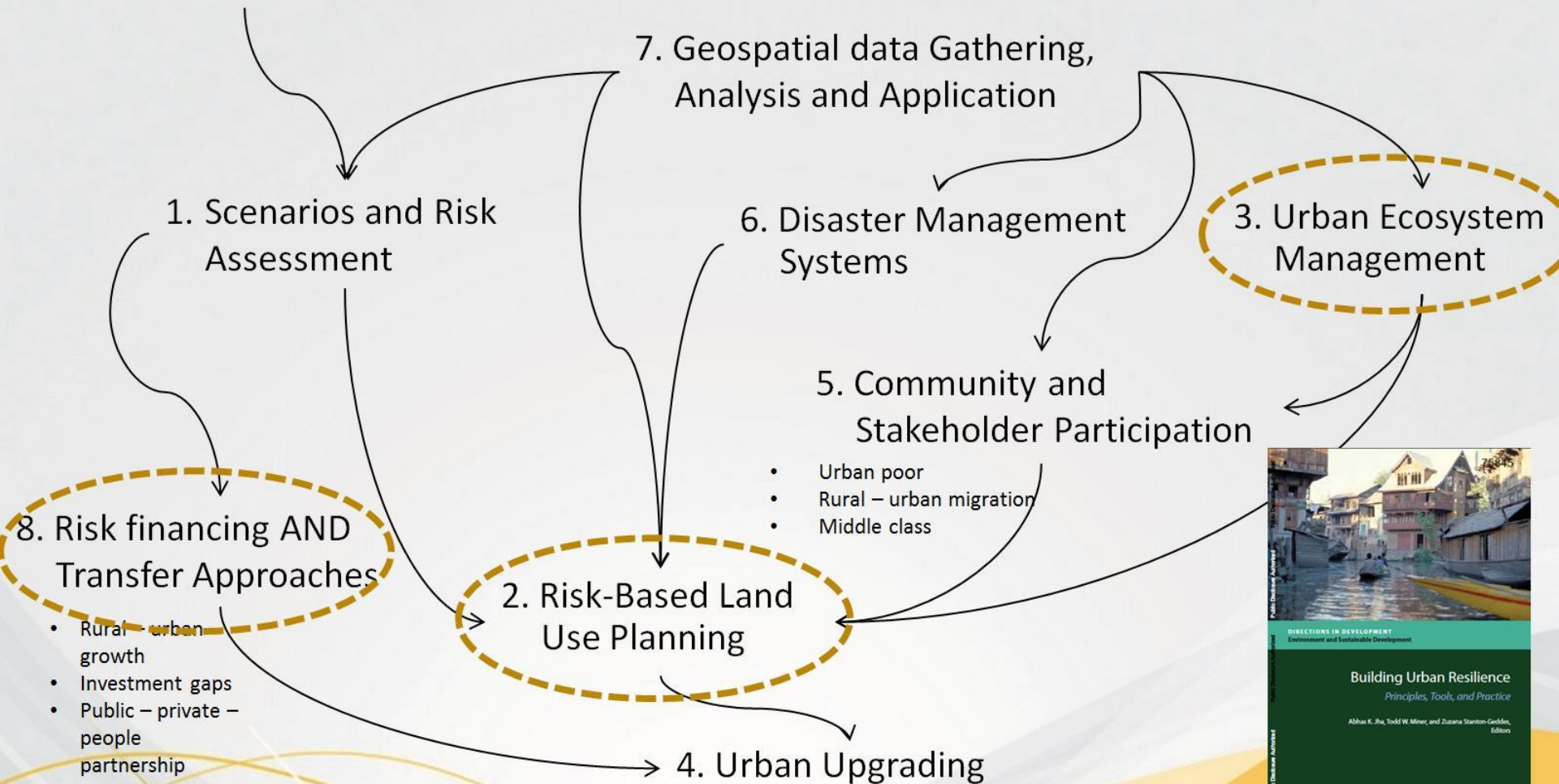
 Major disaster  Precursory disasters (“small” disasters)

Disaster resilient city ...

- *disasters are minimized*
- *inclusive, competent and accountable*
- *understand their risks*
- *people are empowered*
- *anticipate and mitigate*
- *able to respond, implement immediate recovery*
- *adverse impacts of CC and env. change*

Urban resilience framework

0. Grand vision



Urban resilience tools

Risk-sensitive spatial planning and zoning

- Risk assessment*
- Geographic information system*
- Risk-based land use planning*
- Participation of communities and stakeholders*

Ecosystem restoration

- Ecosystems management*
- Participation of communities and stakeholders*
- Recognition of residual risk*

Urban upgrading investment for resilience

- Urban upgrading*
- Socioeconomic cost-benefit analysis*
- Disaster management frameworks*
- Investments in early warning systems*
- Recognition of residual risk*
- Participation of communities and stakeholders*
- Financial approaches*

→ Geospatial based

Indonesia is entering the urban era ?

Populasi penduduk:

mengalami peningkatan sebesar **6 kali lipat**
dalam kurun waktu 4 dekade (1970 – 2010)

52% penduduk perkotaan (2010)

80% penduduk perkotaan (2050)

Tingkat pertumbuhan penduduk per tahun **1.49%**



Kota Otonom

meningkat dari **45 kota** menjadi **93 kota**
rata-rata **553.000** penduduk per kota



Urbanisasi

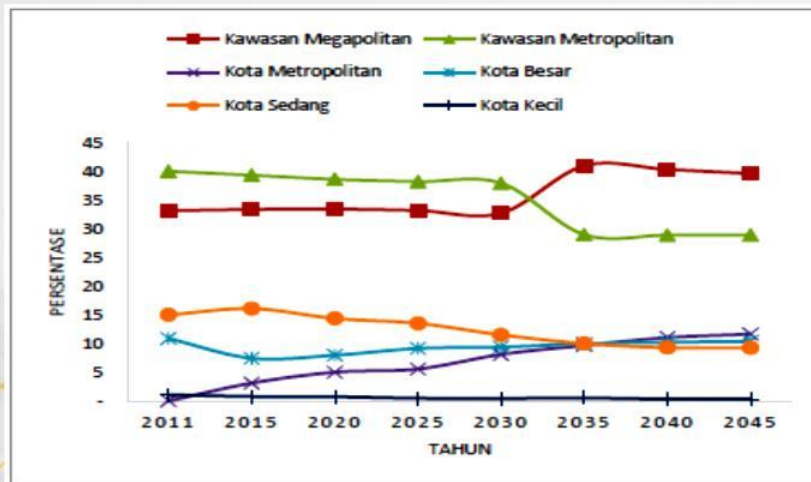
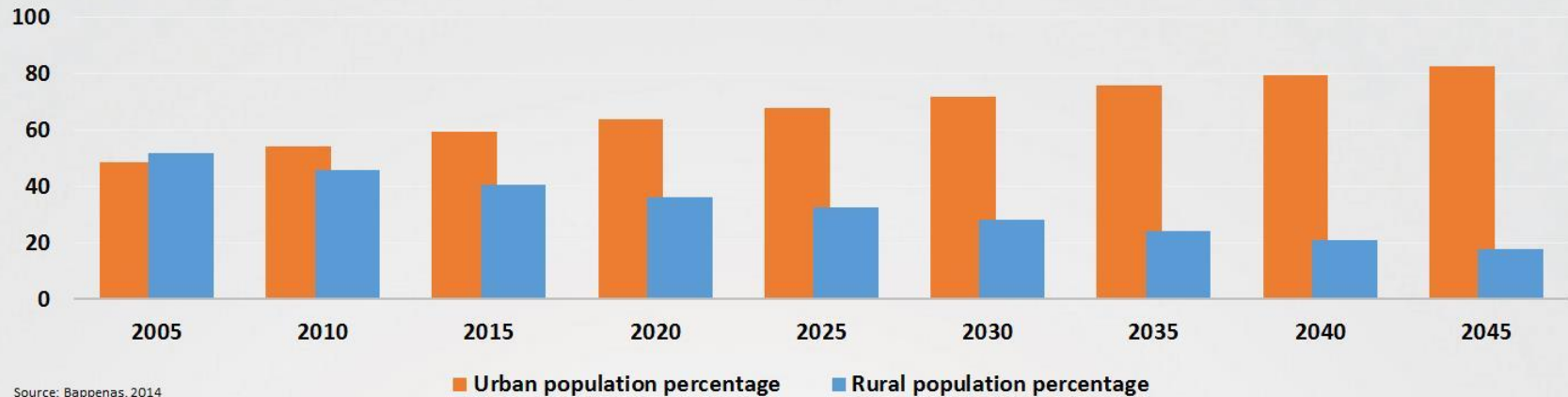
*Inevitable
Demanding
Destructive*

Emisi GRK

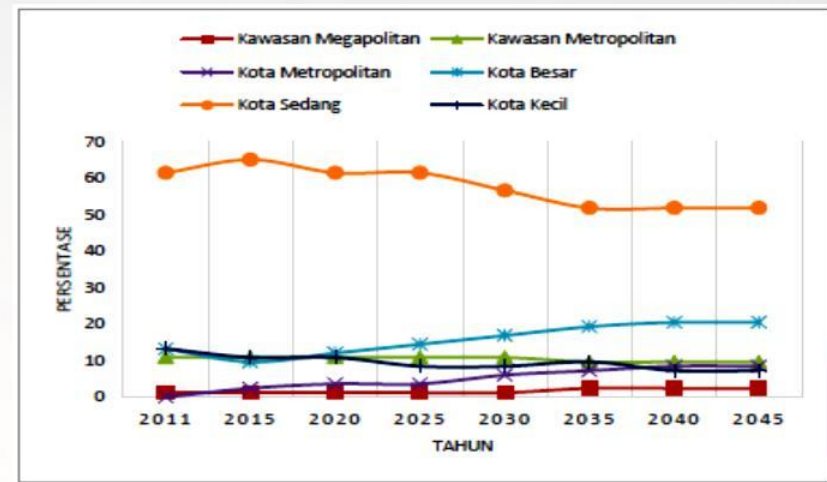
**Degradasi
Kualitas Hidup
Perkotaan**
(sosial, ekonomi, lingkungan)

Projected Indonesian urban profiles

Indonesian urban - rural population
percentage by 2045



Projected urban population proportion

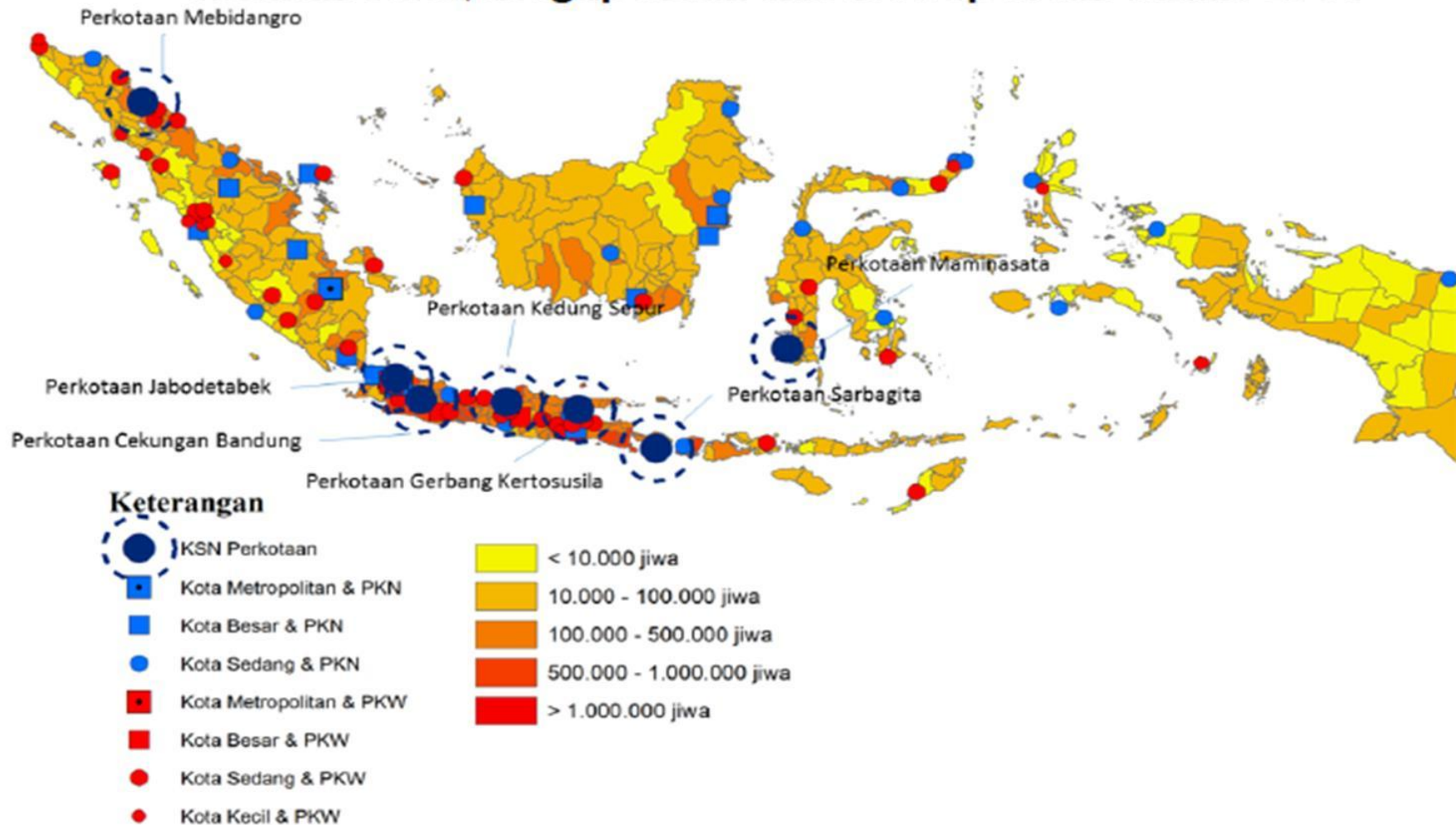


Projected proportion of cities and urban region



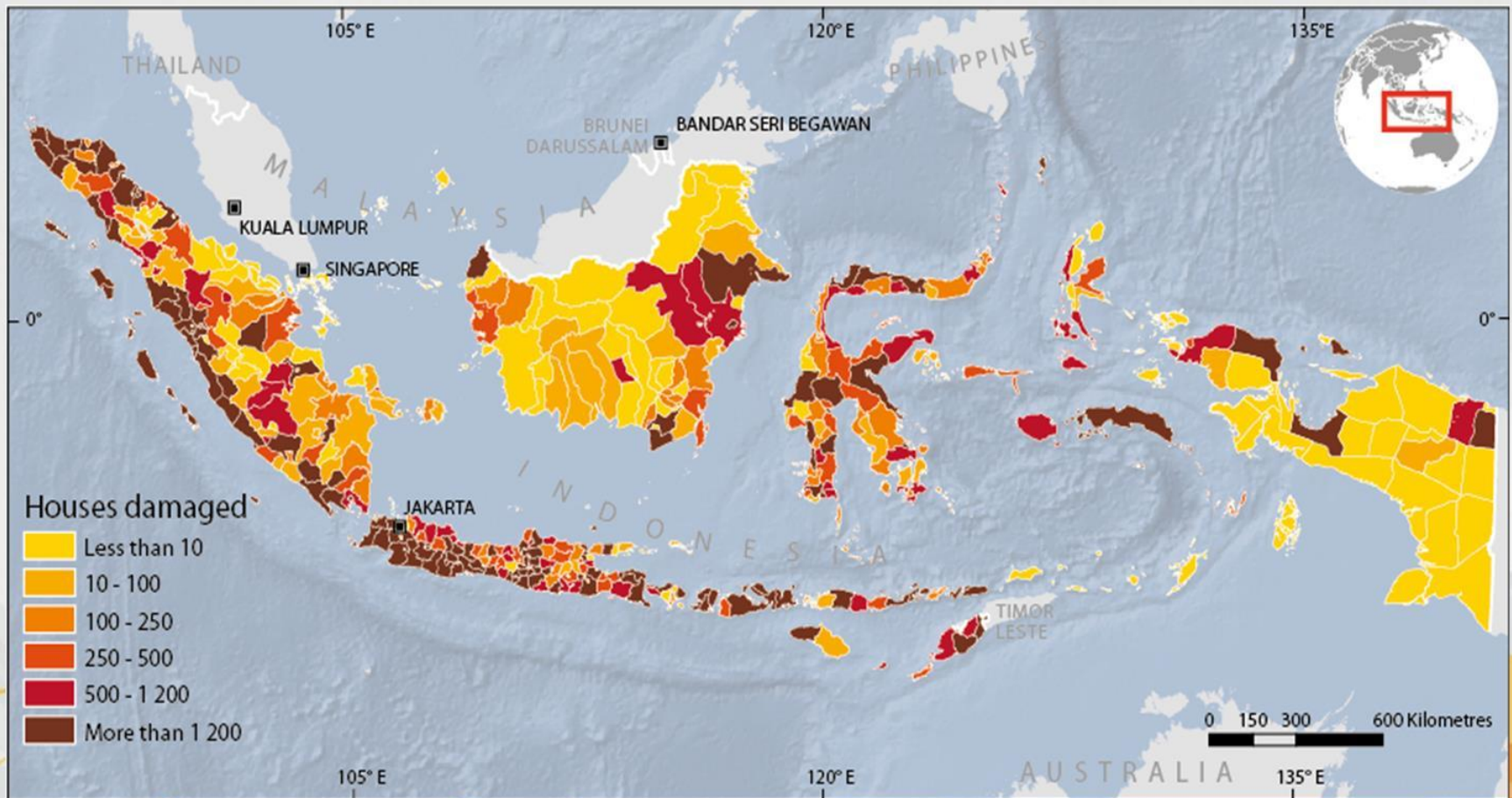
ISU STRATEGIS 1 (3/3)

Sebaran Kota, Megapolitan dan Metropolitan Tahun 2014



Houses damaged and destroyed in extensive disasters in Indonesia, 1970-2009

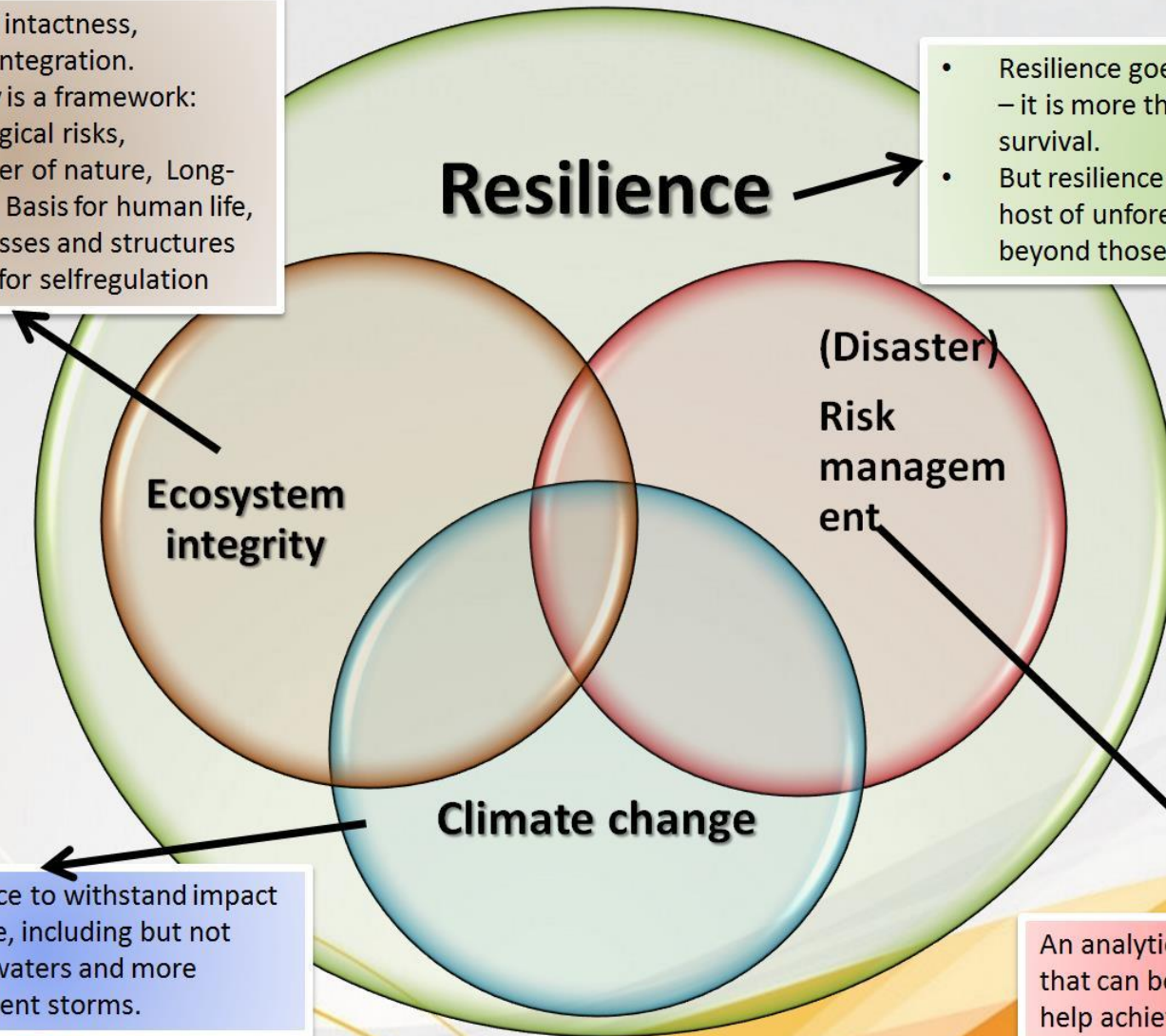
(Global Assessment Report on DRR, 2011)



Resilience goes beyond risks and climate change

Integrity deals with intactness, completeness and integration. Ecosystem Integrity is a framework: Precaution of ecological risks, Preserving the power of nature, Long-term development, Basis for human life, Protection of processes and structures being precautional for selfregulation

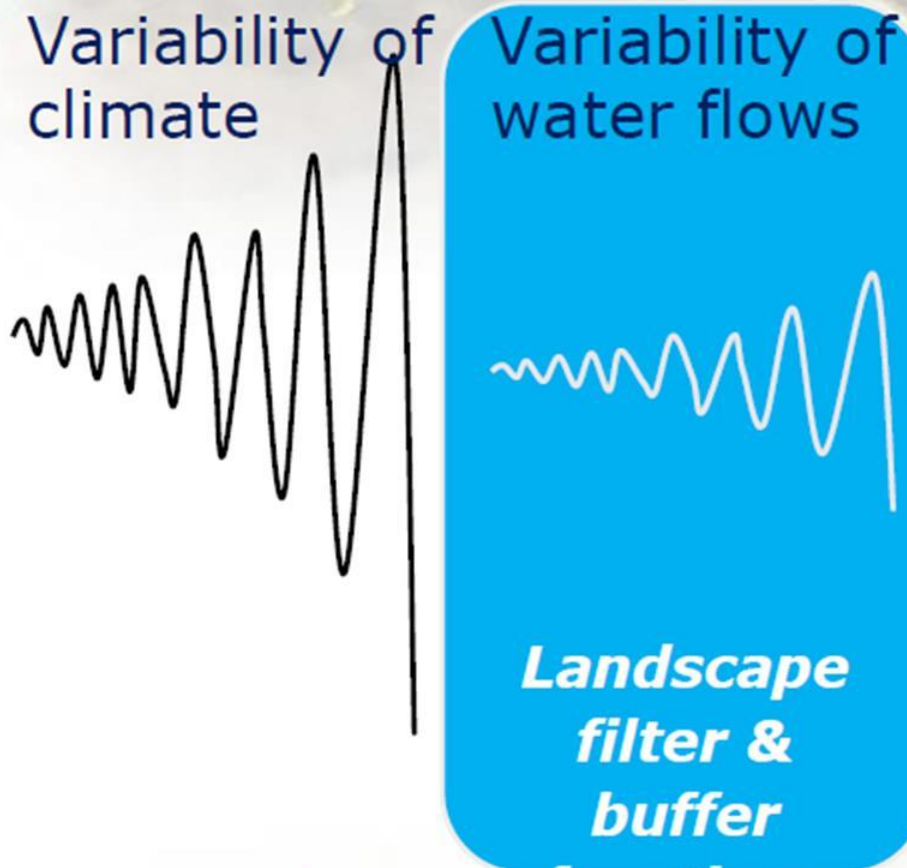
- Resilience goes further than risk management – it is more than coping or short-term survival.
- But resilience is about being prepared for a host of unforeseen shocks and stresses, far beyond those attributable to climate change



Build the resilience to withstand impact of climate change, including but not limited to rising waters and more frequent and violent storms.

An analytical-to-application process that can be integrated and leveraged to help achieve resilience.

Variability of
climate



**Human vulnerability
to floods & droughts**



Currently
increasing



Currently
decreasing

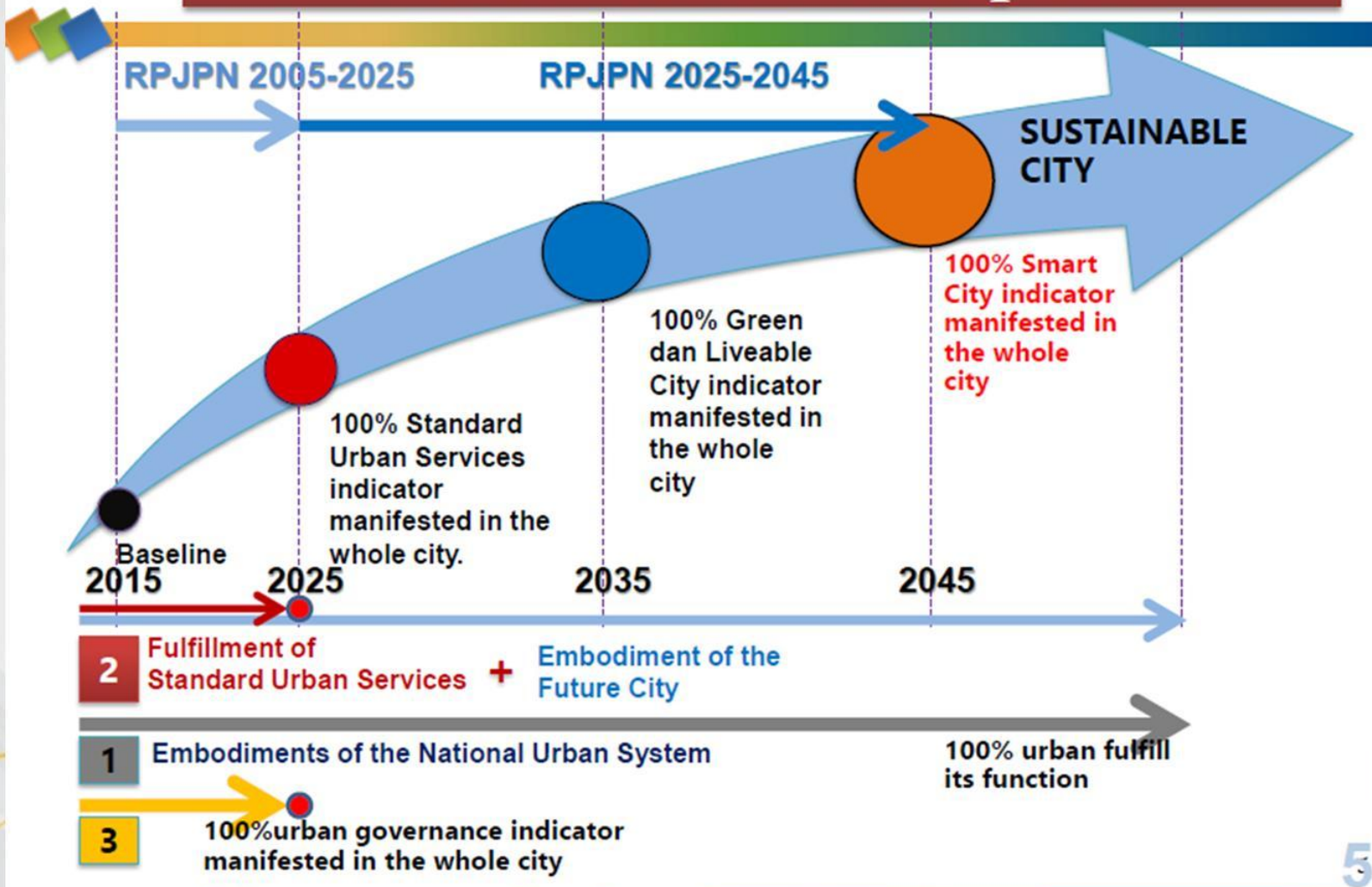


Focus of
'adaptation
strategies'?

WORLD AGROFORESTRY CENTRE

Van Noordwijk.

Roadmap National Urban Development



Selected Green and Resilient Urban Labs in Indonesia

1. Kota Medan
2. Batam
3. Kota Malang
4. Kota Kendari

1. Kota Banda Aceh
2. Kota Batam
3. Kota Metro
4. Kota Singkawang
5. Kota Bogor

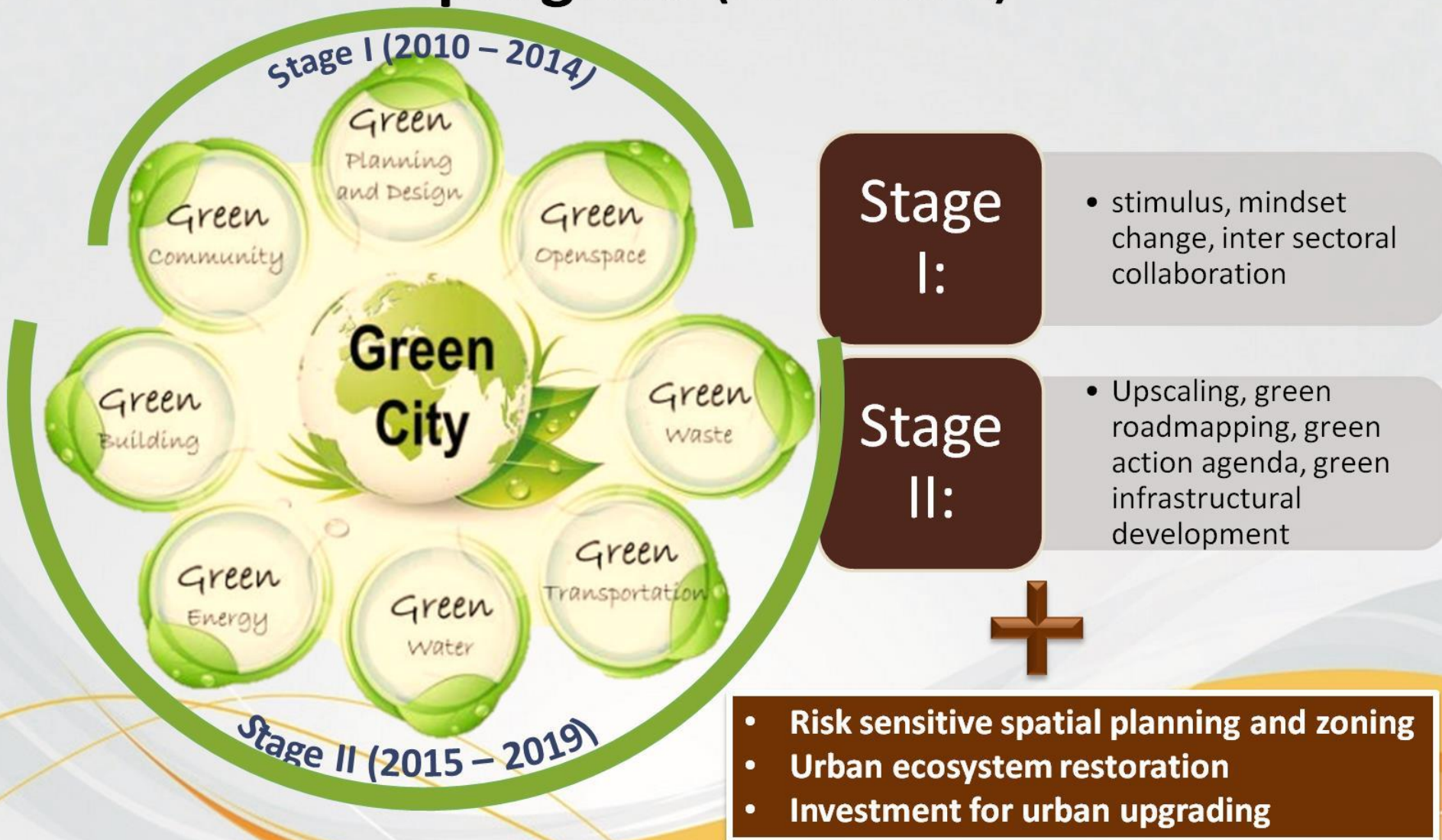
6. Kota Bandung
7. Kota Semarang
8. Kota Salatiga
9. Kota Surakarta
10. Kota Yogyakarta

11. Kota Malang
12. Kota Probolinggo
13. Kota Mataram
14. Kota Palu
15. Kota Kendari

16. Kab. Ngawi
17. Kab. Lombok Tengah
18. Kab. Purbalingga
19. Kab. Wonosobo
20. Kab. Kuningan
21. Kab. Bangka Tengah
22. Kab. Sumbawa
23. Kab. Jombang



Indonesian Urban Labs upscaling program (Kem. PUPR)



Welcome the TWIN-SEA Network to develop Resilient Cities in Indonesia

Thank you....